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YAMAYA RYO****(54) CUBIC BORON NITRIDE SINTERED PRODUCT**

(57)Abstract:

PURPOSE: To obtain the above sintered product which is used as a cutting tool, because of its high abrasion resistance and high resistance to breaking-off, by combining cubic BN, AlN, AlB₂, metal or alloy or Co and/or Ni as major components, Al₂O₃ at a specific volume ratio and a metal compound of high melting point and calcining the mixture.

CONSTITUTION: Starting materials corresponding to 10W80vol.% of cubic BN of less than 15 μ average particle size; 1W5vol.% of AlB₂ and/or AlB₁₂; 1W5vol.% of TiB₂; 0.1W2vol.% of metal or its alloy containing mainly Co and/or Ni; 7.5W80vol.% of Al₂O₃ of less than 1.0 μ average particle size in an amount corresponding to (0.5W0.956)/(0.5W0.044) volume ratio of Al₂O₃/the high melting metallic compound; and 3.75W40vol.% of high melting point metallic compound which is composed of at least one selected from carbides and nitrides of Ti, Zr, Hf, At, Nb or V, carbides of W and a solid solution containing the same, are mixed, crushed, formed then sintered at 1,300W1,600°C under a pressure of 40W60kb at 5W15min.

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